

FURTHER STUDIES ON PHÆDON  
(CHRYSOMELINÆ)

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Due to the kindness of Professor E. C. Van Dyke, I have been permitted to borrow some of the material of *Phædon* in the collection of the California Academy of Science. The detection of four new species in this material as well as specimens of *prasinella* Lec. have led me to present the following revision of my first table (Pan.-Pac. Ent., V, 1928, pp. 44-45.) I have omitted from the present table the species I have not seen (*lævigatus* Dft., *viridis* Melsh., *æruiginosus* Suffr., *grammicus* Dft., *purpurea* Linell) due to the uniform failure of the descriptions to mention characters that appear to me to be of great significance, but the probable place of these species can be determined from my first key.

- A<sup>1</sup>. Second elytral interval without a series of larger punctures; elytral striæ unimpressed; intervals of elytra transversely subrugulose; clypeal suture impressed at sides, feeble at middle (except in *vandykei*); humeral callus weak.
- B<sup>1</sup>. Head and pronotum not microreticulate.
- C<sup>1</sup>. Elytral intervals micropunctulate; length 3.5-4 mm.  
Europe.....*cochleariæ* L.
- C<sup>2</sup>. Elytral intervals coarsely punctate.
- D<sup>1</sup>. Strial punctures evidently larger than the punctures of the intervals, the striæ evident.
- E<sup>1</sup>. Clypeal suture impressed at sides, feeble at middle; elytra more arcuate at sides, more finely punctate; shining greenish or æneous metallic; length 3.4 mm.; Washington, California.....*punctatus* Hatch
- E<sup>2</sup>. Clypeal suture impressed throughout; elytra more parallel, more coarsely punctate; color nearly black, obscure violaceous or greenish; length 3-4 mm.; California.....*vandykei* sp. nov.
- D<sup>2</sup>. Strial punctures smaller, nearly the same size as the punctures of the intervals, the strial series feebly evident; length 3.5 mm.; California.....*prasinella* Lec.
- B<sup>2</sup>. Head and pronotum microreticulate; elytral intervals micropunctulate.

<sup>1</sup> Contribution from the Zoölogical Laboratory of the University of Washington.

- C<sup>1</sup>. Elytra not microreticulate; pronotum and head subequally punctate.
- D<sup>1</sup>. Head and pronotum feebly microreticulate.
- E<sup>1</sup>. Sides of elytra behind humeri subparallel; metallic violaceous; length 4-5 mm.; Arizona.....*purpurescens* sp. nov.
- E<sup>2</sup>. Sides of elytra arcuate; metallic violaceous or green; length 3.4-4 mm.; Arizona.....*huachuca* sp. nov.
- D<sup>2</sup>. Head and pronotum strongly microreticulate; sides of elytra arcuate; bronze; length 3.8 mm.; New York.....*dietrichi* Hatch
- C<sup>2</sup>. Elytra microreticulate; sides of elytra arcuate; punctures of pronotum smaller than those of head; length 3.2 mm.; New York.....*microreticulatus* Hatch
- A<sup>2</sup>. Second elytral interval with a series of larger punctures; elytral intervals microreticulate.
- B<sup>1</sup>. Elytral intervals subrugulose; dorsum not at all microreticulate; clypeal suture more deeply impressed at sides than at middle; humeral callus prominent.
- C<sup>1</sup>. Elytral striæ not impressed, the intervals more roughly rugulose; brilliant metallic green or æneous; length 3.5 mm.; California to Alaska and Alta.....*oviformis* Lec.
- C<sup>2</sup>. Elytral striæ somewhat impressed at middle, the intervals finely subrugulose; obscure metallic æneous or violaceous; length 3-3.4 mm.; B. C.....*vancouverensis* sp. nov.
- B<sup>2</sup>. Elytral intervals not subrugulose.
- C<sup>1</sup>. Clypeal suture impressed at sides, feeble at middle; humeral callus weak; narrowly oval; metallic cupreous; dorsum not microreticulate; length 3.5 mm.; Washington, Alta, New York.....*carri* Hatch
- C<sup>2</sup>. Clypeal suture not impressed at sides, equal throughout; humeral callus prominent; head and pronotum somewhat microreticulate.
- D<sup>1</sup>. Intervals of elytra flat, striæ not impressed; metallic blue, rarely green; length 3-4 mm.; Europe, Labrador (Sherman), New York, Washington.....*armoraciae* L.
- D<sup>2</sup>. Intervals convex; color shining black, not metallic; length 3.9 mm.; Washington.....*niger* Hatch

*Phædon punctatus* Hatch. Numerous specimens: Seattle, Coupeville, and Monroe, Washington; San Diego County, Tulare County, and Napa County, California.

**Phædon (s. str.) vandykei** Hatch, sp. nov.

Nearly black, obscure violaceous or greenish. Head and pronotum moderately equally punctate, micropunctulate, not microreticulate. Clypeal suture subequally impressed throughout. Elytra octostriato-punctate plus a scutellar stria, striæ not impressed; intervals flat, not microreticulate, transversely rugose, coarsely punctate but slightly more finely so than the striæ, which are evident; marginal interval with the striaform series of equally spaced punctures; humeral callus weak. Venter sparsely, moderately to finely punctate, microreticulate. Length 3-4 mm.; width 2.2-2.4 mm.

Type (No. 2595, Mus. Calif. Acad. Sci.), and three paratypes (one in collection of author): **Carmel, California**, February 19, 1911. Van Dyke collection.

*Phædon prasinella* Lec. Tulare County and Marin County, California.

**Phædon (s. str.) purpurescens** Hatch, sp. nov.

Above shining violaceous metallic, pronotum usually greenish. Head densely and pronotum more sparsely subequally punctate, micropunctulate, faintly microreticulate. Clypeal suture impressed at sides, feeble at middle. Elytra nearly parallel behind humeri; octopunctato-striate plus a scutellar stria, striæ not impressed; intervals flat, finely transversely rugose, sparsely micropunctulate; marginal interval with a short median striaform series of punctures; humeral callus moderately evident. Venter coarsely punctate, microreticulate, obscurely violaceous metallic. Length 4.5 mm.; width 2.8-3.1 mm.

Type: **Carr Canyon, Huachuca Mountains, Arizona**, August 7, 1924, J. O. Martin collector. No. 2596, Mus. Calif. Acad. Sci. Two paratypes: Chiricahua Mountains, Cochise County, Arizona, July, 14, 1908, V. W. Owen collector, Van Dyke collection. Two paratypes: Prescott, Arizona, February 1-20, 1909. Van Dyke collection (one in collection of author).

*Purpurescens* is separated from *purpuratus* Linell by the absence of any microreticulation on the elytra and by the structure of the clypeal suture, which is said to be uniformly impressed in *purpuratus*. The description of *purpuratus* makes no mention of transverse wrinkles on the elytral intervals. The scutellum in *purpurescens* is micropunctulate, microreticulate in a single specimen.

**Phædon (s. str.) huachucae** Hatch, sp. nov.

Violaceous or greenish metallic. Head and pronotum coarsely, subequally punctate, micropunctulate, feebly microreticulate; clypeal suture impressed at sides, feeble at middle. Elytra with sides arcuate behind humeri; octo-punctato-striate plus a scutellar stria, striæ not impressed; intervals flat, transversely rugose, sparsely micropunctulate; marginal interval with a striaform series of punctures; humeral callus very weak but evident. Venter punctate, feebly microreticulate. Length 3.4-4 mm.; width 2.6-2.9 mm.

Type: **Carr Canyon, Huachuca Mountains, Arizona**, August 5, 1925, J. O. Martin collector. No. 2597, Mus. Calif. Acad. Sci. Paratype with same data in collection of author. Two paratypes: Huachuca Mountains, Arizona. Van Dyke collection.

*Phædon microreticulatus* Hatch. One specimen: Concord, New York.

*Phædon oviformis* Lec. Rampart, Alaska.

**Phædon (s. str.) vancouverensis** Hatch, sp. nov.

Obscure æneous or violaceous, tibiæ and tarsi rufescent. Head and pronotum punctate, the latter somewhat more finely so, not at all microreticulate, sparsely micropunctulate. Clypeal suture more deeply impressed at sides than at middle. Elytra octo-punctato-striate plus a scutellar stria, the striæ feebly impressed, especially toward the middle of the elytra; intervals nearly flat, very feebly convex, very feebly transversely rugose, sparsely micropunctulate; the second and marginal intervals each with a striaform series of punctures; humeral callus prominent. Venter finely, sparsely punctate, strongly microreticulate. Length 3-3.4 mm.; width 2-2.3 mm.

Type (No. 2598, Mus. Calif. Acad. Sci.), and two paratypes (one in collection of author): **Nanaimo, B. C.**, Biological Station, June 28, 1920. E. P. Van Duzee collector.

Distinguished from *niger* Hatch by its smaller size, faint metallic color less densely micropunctulate and not at all microreticulate head and pronotum, less densely micropunctulate, more or less evidently rugose and more feebly rounded elytral intervals, less deeply impressed elytral striæ, and rufescent tibiæ and tarsi.

*P. carri* Hatch. One specimen: Port Angeles, Washington.

*P. niger* Hatch. A second specimen from Coupeville, Washington, in the author's collection.